

What is claimed is:

1. A device for modulating a volume of neural tissue comprising:
 - a cannula having a proximal end, a distal end, and a lumen extending to at least the distal end,
 - an actuator mechanism at least partially disposed in the lumen of the cannula;
 - a plurality of leads having at least one electrode disposed thereon, the plurality of leads being coupled to the actuator mechanism to reciprocate between a retracted position wherein the plurality of leads are radially constrained within the lumen and an extended position wherein the plurality of leads deploy radially outwardly into the neural tissue.
2. The device of claim 1, wherein at least one of the leads is shaped so that it assumes an outwardly everted configuration as it extends distally into tissue from the distal end of the cannula.
3. The device of claim 1, wherein at least one of the leads is quarter-round shaped.
4. The device of claim 3, wherein the plurality of leads includes four leads, each lead having a quarter-round shape.
5. The device of claim 4, wherein the plurality of leads includes four outer leads that project outwardly from the cannula when in the extended position and a central lead that projects axially away from the distal end of the cannula when in the extended position.

6. A device for modulating a volume of neural tissue comprising:
 - a cannula having a proximal end, a distal end, and a lumen extending to at least the distal end,
 - an actuator mechanism at least partially disposed in the lumen of the cannula;
 - a plurality of leads having at least one electrode disposed thereon, the plurality of leads being coupled to the actuator mechanism to reciprocate between a retracted position wherein the plurality of leads are radially constrained within the lumen and an extended position; and
 - a guide provided at the distal end of the cannula to deflect the plurality of leads radially outwardly into the neural tissue when the actuator mechanism is moved to the extended position.
7. The device of claim 6, wherein the guide and the distal end of the cannula form an opening therebetween to permit the plurality of leads to exit the cannula.
8. The device of claim 6, wherein the guide includes grooves to assist in the deflection of the plurality of leads outwardly into the neural tissue.
9. The device of claim 6, wherein the guide includes an electrode disposed thereon.
10. The device of claim 6, wherein the actuation mechanism includes a cylindrical block coupled to a shaft.

11. The device of claim 10, wherein each of the plurality of leads is coupled to the cylindrical block.
12. A cannula for housing at least one lead used in a neuromodulation device, the cannula comprising:
 - a cylindrical body having a proximal end, a distal end, and a wall defining a lumen extending to at least the distal end of the cylindrical body;
 - the wall having an inner surface including at least one tab protruding into the lumen to prevent rotation of the at least one lead within the lumen.
13. The cannula of claim 12, wherein the inner surface includes a plurality of tabs protruding into the lumen to prevent rotation of multiple leads within the lumen.